

WHAT IS CLAIMED IS:

1. A method of fabricating ball grid array packages, comprising:

providing a substrate;

5 providing a ball film, the ball film comprising a plurality of metal balls each movably contained within a respective one of a plurality of slots of a thin film;

coupling the metal balls to the substrate; and

removing the thin film from the metal balls.

10 2. The method of Claim 1, wherein providing a substrate comprises

providing the substrate with a plurality of slots formed therein, and wherein the metal balls are arranged in a pattern that matches the pattern of the slots formed in the substrate.

15 3. The method of Claim 2, wherein the slots are spherically shaped.

20 4. The method of Claim 1, wherein providing a substrate comprises providing an integrated circuit chip having a plurality of bond pads formed thereon, and wherein the metal balls are arranged in a pattern that matches the pattern of the bond pads formed on the integrated circuit chip.

25 5. The method of Claim 4, wherein the metal balls are formed from solder.

6. The method of Claim 4, wherein the metal balls are formed from gold.

25 7. The method of Claim 1, wherein the thin film is formed from polyimide.

30 8. The method of Claim 1, further comprising providing the first and second thin films each with a thickness of between 0.01 mm and 0.4 mm.

9. The method of Claim 1, further comprising providing the metal balls each with a diameter of between 0.1 mm and 0.5 mm.

10. A method of testing ball grid array packages, comprising:
 - providing a ball grid array package having a plurality of solder balls coupled thereto;
 - 5 providing a contact board having a plurality of metal contact pins, the metal contact pins arranged in a pattern that matches a pattern of the solder balls of the ball grid array package;
 - 10 providing a ball film, the ball film comprising a plurality of metal balls each movably contained within a respective one of a plurality of slots of a thin film, the metal balls arranged in a pattern that matches the pattern of the solder balls of the ball grid array package; and
 - positioning the ball film between the ball grid array package and the contact board in such a manner that each metal ball is positioned between a respective solder ball and a respective metal contact pin.
- 15 11. The method of Claim 10, wherein the slots are spherically shaped.
12. The method of Claim 10, wherein the thin film is formed from polyimide.
- 20 13. The method of Claim 10, wherein the metal balls are formed from solder.
14. The method of Claim 10, further comprising providing the first and second thin films each with a thickness of between 0.01 mm and 0.4 mm.
- 25 15. The method of Claim 10, further comprising providing the metal balls each with a diameter of between 0.1 mm and 0.5 mm.

16. A ball film for fabricating and/or testing integrated circuits, comprising:

a thin film comprising a plurality of slots; and

5 a plurality of metal balls each movably contained within a respective one of the plurality of slots.

17. The ball film of Claim 16, wherein the slots are spherically shaped.

18. The ball film of Claim 16, wherein the thin film is formed from two 10 separate thin films of material.

19. The ball film of Claim 16, wherein the thin film is formed from polyimide.

15 20. The ball film of Claim 16, wherein the metal balls are formed from solder.

21. The ball film of Claim 16, wherein the thin film comprises a thickness 20 of between 0.01 mm and 0.4 mm.

22. The ball film of Claim 16, wherein the metal balls each have a diameter of between 0.1 mm and 0.5 mm.

23. A method of forming a ball film for fabricating and/or testing integrated circuits, comprising:

forming a first set of slots in a first thin film of material;

5 positioning a plurality of metal balls each within a respective one of the first set of slots;

forming a second set of slots in a second thin film of material; and

coupling the first and second thin films in such a manner that the slots of the second set of slots are associated with respective slots of the first set of slots and the metal balls are movably contained therein.

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24. The method of Claim 23, wherein the slots of both the first and second set of slots are spherically shaped.

15 25. The method of Claim 23, wherein the thin film is formed from polyimide.

26. The method of Claim 23, wherein the metal balls are formed from solder.

20 27. The method of Claim 23, further comprising providing the first and second thin films each with a thickness of between 0.01 mm and 0.4 mm.

28. The method of Claim 23, further comprising providing the metal balls each with a diameter of between 0.1 mm and 0.5 mm.